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Translated from the German

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AUSLEGESCHRIFT* 1 021 738

*Translator's note: An 'Auselegeschrift' is a German patent application, laid open to public inspection after examination and acceptance by the German PTO.

IPC: B 62 g

Date of application: December 17, 1954

Date the 'Auslegeschrift' was laid open to public inspection, and date of publication of the Auslegeschirft: December 27, 1957

Title in German of the object of the invention: Abdichtung für schlauchloser auf Flachbett- oder Schrägschulterfelgen aufgesetzte Luftreifen

Applicant: Metzeler Gummiwerke Aktiengesellschaft, Munich
Claimed priority: Belgium, February 4, 1954
Inventor: Joseph Servaes

SEALING FOR TUBELESS PNEUMATIC TIRES, ATTACHED ON FLAT-BASE RIMS OR TAPERED BEAD SEAT RIMS

The invention pertains to a sealing for tubeless pneumatic tires - attached on flat-base rims, or on rims, having tapered bead seats - having a preformed or premolded insert band (insert ply), consisting of an elastic material, preferably rubber, which insert band - based on its shaping - is intended to be an arrangement

between the beads of the pneumatic tire, and is set up on the part of the wheel rim, which is lying in between, and on both of its end-side surfaces of contact with the beads of the pneumatic tire has a multiple number of sharp-edged ribs, which are concentric to one another and to the rim base, and whose projecting edges are preferably designed as acute-angled, which ribs apply these surfaces of contact with a high specific pressure upon the beads, and, therewith, allow the beads to be internally sealed.

An insert band, intended to be arranged between the beads of the pneumatic tire is already known, whereby the insert band's part, located between the beads of the pneumatic tire at least in the case of a tire that is under internal pressure, rests against the wheel rim base, adjacent to the tire. At the same time, the sealing of the tire with respect to the rim is achieved as a result of the fact that when a tire has been inflated, the free leg of the insert band becomes positioned on the inner flanks of the tire bead heels (feet) in a flat contact with them. Moreover, a ring for the sealing of the tire's hollow space with respect to the rim was already proposed whereby the inner flanks of the tire bead heels are pressed in a sealing-off manner upon the ring, inserted between them, by means of a pressure, exerted upon the tire beads from outside by mechanical means. In order for the sealing effect to be improved, the frontal sides of the sealing ring (O-ring), which are getting in contact

with the inner surfaces of the tire beads, are provided with uninterrupted ribs, running all the way around. This arrangement lacks the expected technical means, necessary to induce the sealing effect.

In accordance with the proposed invention, these imperfections are avoided as a result of the fact that the insert band is designed as a bridge arch - inserted between the two beads [heels] of the tires - which supports the application or emplacement of its ribbed lateral surfaces, which are resting on the beads, under the tire's pressure.

The drawing shows that between the bead heels of a tire 2, there is inserted an endless rubber- or insert-band 4, touching the beads of the tire, in which insert band 4, a standard inner tube valve is tightly screwed or installed in the presence of heat. The insert band 4 is designed as a bridge arch, which is to be inserted between the two beads of the tire 2, which bridge - under the effect of the tire pressure - supports the contact of its ribbed lateral surfaces, resting on the beads. The projecting sharp-edged ribs do not produce any labyrinth packing or sealing but, on the contrary, they have the task to absorb the pressure of the air in the interior of the pneumatic tire by means of linearly shaped contact between the insert band and the tire beads, as a result of which high values of the specific pressure between these parts originate, which pressure produces the seal. In the

case of the insert band, which has been split in such a way, and its arrangement, the high specific pressure between the sealing or band 4 and the beads of the tire 2 is achieved as a result of the toggle lever effect of the sealing band 4, which has been designed and made in the shape of a bridge arch, and can have the same thickness, or, when contemplated along its width, can have various thickness. At the same time, the insert band 4 is pressed down upon the wheel rim 3 by means of the inner air pressure of the pneumatic tire, as a result of which the uninterruptedly (full perimeter) ribs on the edge of the insert band press upon the tire beads.

CLAIMS

Sealing for tubeless pneumatic tires - attached on flat-base rims, or on rims, having tapered bead seats - having a preformed or premolded insert band (insert ply), consisting of an elastic material, preferably rubber, which insert band - based on its shaping - is intended to be an arrangement between the beads of the pneumatic tire, and is set up on the part of the wheel rim, which is lying in between, and on both of its end-side surfaces of contact with the beads of the pneumatic tire has a multiple number of sharp-edged ribs, which are concentric to one another and to the rim base, and whose projecting edges are preferably designed as acute-angled, which ribs apply these surfaces of contact with a high

specific pressure upon the beads, and, therewith, allow the beads to be internally sealed, characterized in that the insert band is designed as a bridge arch - to be inserted between the two beads - which supports the contact of his ribbed lateral surfaces, resting on the beads, under the effect of the tire pressure.

The following documents were taken into account for the determination of patentability:

DE 893 164;
FR 1 026 545;
GB 100 088;
US Pat. Nos. 1 637 599; 2,087,228.

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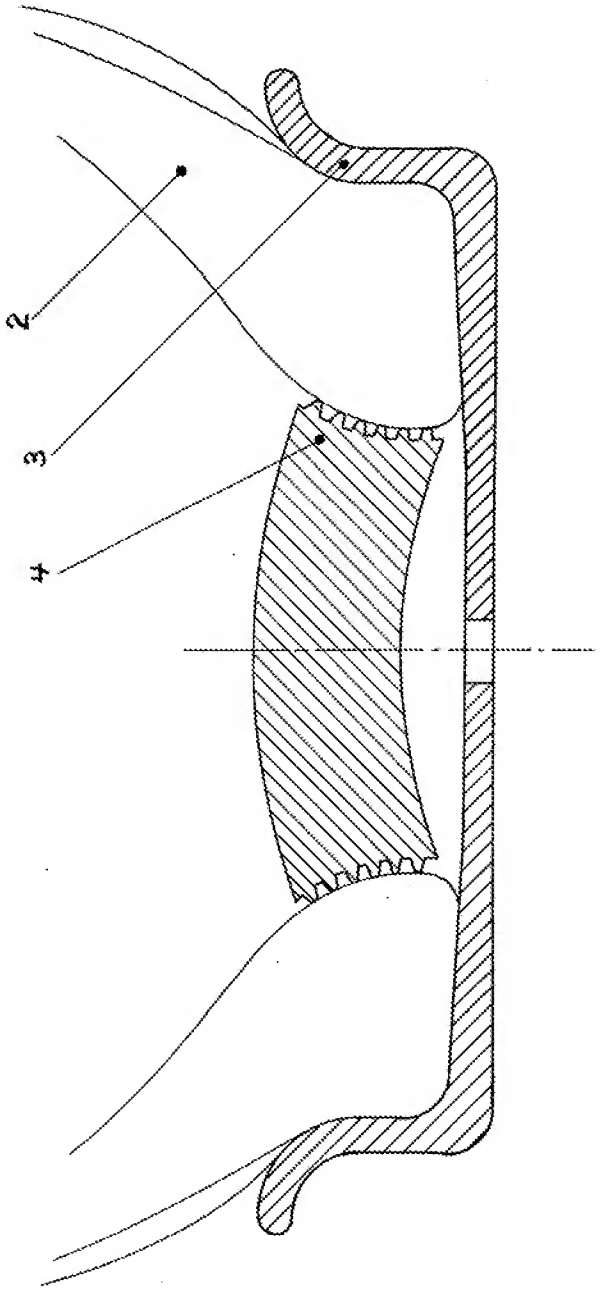

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